

CLAIMS:

1. A method for reducing noise in a voice signal, the method comprising the steps of:

- (i) processing a compressed digital signal representative of the voice signal including a speech component and a noise component; and
- (ii) determining the noise component to be subtracted from the compressed digital signal.

2. The method according to Claim 1, wherein said compressed digital signal is based on a set of linear prediction coding (LPC) coefficients and a residual signal, and is obtained by applying an LPC analysis to the voice signal.

3. The method according to Claim 2, wherein the processing of the compressed digital signal comprises the steps of:

- determining a power spectrum of the noise component of said compressed digital signal during a non-speech activity, and calculating its average value;
- calculating a power spectrum estimator of the compressed digital signal with a reduced noise component;
- determining an autocorrelation function of the compressed digital signal with the reduced noise component; and
- determining a set of modified LPC coefficients from the autocorrelation function.

4. A method for processing a voice signal to reduce a noise therefrom, the method comprising the steps of:

- (a) providing a digital signal representative of said voice signal including a speech component and a noise component;
- (b) applying LPC analysis to the digital signal, thereby obtaining a compressed digital signal representative of said voice signal, wherein said compressed digital signal is based on a set of LPC coefficients and a residual signal;

- (c) determining a power spectrum of the noise component during a non-speech activity, and calculating its average value;
- (d) calculating a power spectrum estimator of the compressed digital signal with reduced noise component;
- 5 (e) determining an autocorrelation function of the compressed digital signal with the reduced noise component; and
- (f) determining modified LPC coefficients representing the speech component with reduced noise spectrum from the autocorrelation function.

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10 5. A voice processing unit for use in a voice operated system, the voice processing unit comprising a noise reduction utility interconnected between a voice coding utility and a voice recognition utility, the noise reduction utility being operable for processing a compressed digital signal representative of an input voice signal received from the voice coding utility, and generating an output compressed digital signal with reduced noise spectrum.

15 6. A voice operated system comprising an input port for receiving an input voice signal, an analog-to-digital converter for processing the input signal to generate a digital output indicative thereof, a voice processing utility for processing the digital signal and generating a compressed digital signal representative of the input voice signal, a voice processing unit, a system interface utility, and a control module,
20 which is interconnected between the voice processing utility and the voice processing unit, and is connected to the system interface to operate it in response to a speech signal, the voice processing unit comprising:

- a noise reduction utility coupled to the voice processing utility for processing said compressed digital signal, and generating an output compressed digital signal with reduced noise spectrum; and
- 25 - a voice recognition utility coupled to the noise reduction utility for processing said output compressed digital signal with reduced noise spectrum.